Every Day Counts - Case Study 2

Project name Conventional Alt. CS 2

Fla.

Labor rate table Labor 2011

Equipment rate table Equip 2011

Notes 1. Pricing is 2011 \$.

2. Construction Schedule of 30 mos.

3. Rates reflect majority of work performed evenings to minimize disruption.

4. 2 Bridges.

5. Labor Cost/Unit - This reflects the cost of Labor to put one unit of measure of work in place. This is comprised of a typical crew with associated productivity required to perform the activity. Labor is priced up to include base rate, fringes, taxes, insurance, etc.

6. Material Cost/Unit - This cost represents the final installed cost for all the materials associated with the item of work.

7. Sub Contract Cost/Unit - this represents the Sub Contract all in Cost to put one unit of work in place. This cost includes all costs necessary to reflect a total installed cost (incls. Labor, equipment and material).

8. Equipment Cost/Unit - This represents the cost of Construction Equipment necessary to put one unit of work in place. This cost includes equipment ownership and maintenance and operational costs.

9. Other Cost/Unit - This cost represents all other costs necessary to perform the item of work and not covered by the abovementioned costs.

10. Total cost/unit - This is the summation of all unit costs to arrive at a total cost per unit to put one one item of work in place.

11. Total Amount - Total cost to put the quantity of units specified in place.

Report format

Sorted by 'LOCATION/Pay Item/Group phase/Phase'

'Detail' summary Allocate addons

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
Additional Cost Additional Cost	Detour							
* unassigned *								
01-54-36.00 Equipment Mobilization								
01-54-36.50 Mobilization Or Demo								
Transport Bridge to Site	4.00 ea	517.79	-	-	817.10	-	1,334.89	5,340
Transport Bridge back to FDOT	4.00 ea	517.79	-	-	817.11	-	1,334.90	5,340
Mobilization Or Demob.							-	10,679
Equipment Mobilization								10,679
01-55-00.00 Vehicular Access And Pa	_							
01-55-23.50 Roads And Sidewalks						4 405 00	4.425.00	0.074.000
Temporary, roads	2,000.00 lf			-		1,135.98 155.45	1,135.98	2,271,966
Temporary, roads Remove Roads And Sidewalks	2,000.00 If			-		155.45	155.45 _	310,901 2,582,866
Vehicular Access And								2,582,866
Parking								2,002,000
32-34-00.00 Fabricated Bridges								
32-34-10.10 Bridges, Highway								
Fabricated highway	330.00 If	50.64	0.00	-	13.97	-	64.61	21,322
bridges, Install	220.00.16	50.04			40.07		04.04	24 222
Fabricated highway	330.00 If	50.64		-	13.97	-	64.61	21,322
bridges, Remove	350.00 ov	293.61	198.50		19.01		511.12	170 001
Fabricated highway bridges, concrete in place,	350.00 cy	293.01	196.50	-	19.01	-	511.12	178,891
abutment								
Fabricated highway	350.00 cy		0.00	_		149.47	149.47	52,315
bridges, concrete in place,	330.00 Cy		0.00			140.47	175.71	52,515
abutment Remove								
Bridges, Highway							-	273,850
Fabricated Bridges								273,850
34-71-13.00 Vehicle Barriers								
34-71-13.17 Security Vehicle Barri								
Maintain Detour	500.00 day	-	-	-	-	89.68	89.68 _	44,841
Security Vehicle Barriers								44,841
Vehicle Barriers								44,841
* unassigned *								2,912,237
Additional Cost								2,912,237
Additional Cost								
Detour								

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
General Conditions General Co	nditions							
* unassigned *								
01-31-00.00 Project Management A	and Coordination							
01-31-13.20 Field Personnel								
Field Personnel, clerk, average	125.00 week	472.96	-	-			472.96	59,120
Field engineer, average	129.00 week	1,457.74	-	-			1,457.74	188,049
Field Personnel, project manager, average	129.00 week	2,397.18	-	-		-	2,397.18	309,236
Field Personnel,	125.00 week	2,202.81	-	-			2,202.81	275,351
superintendent, average							_	
Field Personnel								831,756
Project Management And								831,756
Coordination								
01-32-33.00 Photographic Documer 01-32-33.50 Photographs	ntation							
Construction Photographs	128.00 set	-	567.99	-			567.99	72,703
Photographs								72,703
Photographic								72,703
Documentation								
01-45-00.00 Quality Control								
01-45-23.50 Testing								
Field Testing	2.00 prjc	-	-	-		- 35,981.96	35,981.96	71,964
Testing							-	71,964
Quality Control								71,964
01-52-13.00 Field Offices And Shed 01-52-13.20 Office And Storage								
Office Trailer, furnished,	, 30.00 ea	-	288.18	-			288.18	8,645
rent per month, 32' x 8',								,
excl. hookups								
Storage Boxes, rent per	60.00 ea	-	87.89	-			87.89	5,273
month, 20' x 8'								
Office And Storage Space								13,919
01-52-13.40 Field Office Expens	e							
Field Office Expense, office	30.00 mo	-	179.37	-			179.37	5,381
equipment rental, average	22.000						0.01	3,331
Field Office Expense, office	30.00 mo	-	113.60	-			113.60	3,408
supplies, average								-,
11 , 5								

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Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
01-52-13.40 Field Office Expense	•							
Field Office Expense,	30.00 mo	=	251.11	-	-	-	251.11	7,533
telephone bill; avg.								
bill/month, incl. long dist. Field Office Expense, field	30.00 mo	_	131.54	_	_	_	131.54	3,946
office lights & HVAC	30.00 1110	-	131.34	-	_	_	131.34	3,940
Field Office Expense							_	20,268
Field Offices And Sheds								34,187
01-56-26.00 Temporary Fencing								
01-56-26.50 Temporary Fencing								
Temporary Fencing, chain	2,000.00 If	3.43	8.37	-	-	-	11.80	23,607
link, 6' high, 11 ga							-	00.007
Temporary Fencing Temporary Fencing								23,607 23,607
remporary rending								23,007
01-58-00.00 Project Identification								
01-58-13.50 Signs								
Project Signs	50.00 sf	-	21.40	-	-	-	21.40 _	1,070
Signs Project Identification								1,070 1,070
r rojest raenumoaton								1,010
01-71-23.00 Field Engineering								
01-71-23.13 Construction Layout								
Survey Crew	95.00 day	2,057.23	-	-	90.63	-	2,147.86 _	204,047
Construction Layout Field Engineering								204,047 204,047
* unassigned *								1,239,334
General Conditions								1,239,334
General Conditions								, ,
Permanent Walls Permanent Wa	allo							
400-2-10 Concrete Class II	IIIS							
03-30-00.00 Cast-In-Place Concrete								
03-30-53.40 Concrete In Place								
Approach Slab	262.60 cy	154.57	173.39	-	20.87	-	348.83 _	91,602
Concrete In Place								91,602
Cast-In-Place Concrete								91,602
400-2-10 Concrete Class II								91,602

415-1-9 Reinforcing Steel

03-21-05.00 Reinforcing Steel Accessories

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
03-21-10.60 Reinforcing In Place Reinforcing Steel Approach	53,832.00 lb	0.40	0.06	_	0.08	_	0.54	28,865
Slabs	33,032.00 ID	0.40	0.00	_	0.00	_	0.54	20,003
Reinforcing In Place							-	28,865
Reinforcing Steel								28,865
Accessories								
415-1-9 Reinforcing Steel								28,865
521-8-1 Concrete Traffic Railing								
34-71-13.00 Vehicle Barriers								
34-71-13.26 Vehicle Guide Rails								
Concrete Traffic Railing	220.00 If	13.96	49.03	-	4.44	-	67.43	14,834
Barrier Retaining Wall							_	
Vehicle Guide Rails								14,834
Vehicle Barriers								14,834
521-8-1 Concrete Traffic								14,834
Railing								
548-12 Retainig Wall System								
32-32-23.00 Retaining Walls								
32-32-23.13 Retaining Walls								
Retaining Wall System	22,144.00 sf	8.28	14.05	-	4.24	-	26.58	588,489
Retaining Walls								588,489
Retaining Walls								588,489
548-12 Retainig Wall System								588,489
Permanent Walls								722 700
								723,790
Permanent Walls								
Substructure-End Substructure	-End Bents							
400-4-5 Concrete Class IV (Substruct	ure)							
03-30-00.00 Cast-In-Place Concrete								
03-30-53.40 Concrete In Place								
Concrete Class IV	144.00 cy	309.15	197.30	-	41.73	-	548.18 _	78,938
Concrete In Place								78,938
Cast-In-Place Concrete								78,938
400-4-5 Concrete Class IV								78,938
(Substructure)								

415-1-5 Reinforcing Steel Substructure

03-21-05.00 Reinforcing Steel Accessories 03-21-10.60 Reinforcing In Place

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
03-21-10.60 Reinforcing In Place Reinforcing Steel	19,440.00 lb	0.53	0.50	_	0.11	_	1.13	21,996
Reinforcing In Place	10,110.00 15	0.00	0.00		0.11			21,996
Reinforcing Steel								21,996
Accessories								
415-1-5 Reinforcing Steel								21,996
Substructure								
455-143-5 Test Piles								
31-62-00.00 Driven Piles								
31-62-13.23 Prestressed Concrete								
Prestressed concrete piles,	380.00 vlf	32.18	65.77	-	18.54	-	116.48	44,263
24" square, Test Pile Prestressed Concrete							-	44,263
Piles								44,203
Driven Piles								44,263
455-143-5 Test Piles								44,263
455-34-5 Concrete Piling Prestressed								
31-62-00.00 Driven Piles								
31-62-13.23 Prestressed Concrete	e Piles							
Prestressed concrete piles,	2,240.00 vlf	11.70	65.77	-	6.74	-	84.21	188,628
24" square,							_	
Prestressed Concrete								188,628
Piles								
Driven Piles								188,628
455-34-5 Concrete Piling Prestressed								188,628
								222.025
Substructure-End								333,825
Substructure-End								
Bents								
Substructure-Piers Substructure	o Dioro							
400-4-5 Concrete Class IV (Substruction								
03-30-00.00 Cast-In-Place Concrete	•							
03-30-53.40 Concrete In Place								
Concrete Class IV	306.00 cy	309.15	197.30	-	41.73	-	548.18	167,743
Concrete In Place	•						-	167,743
Cast-In-Place Concrete								167,743
400-4-5 Concrete Class IV								167,743
(Substructure)								

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
415-1-5 Reinforcing Steel Substructu 03-21-05.00 Reinforcing Steel Acce 03-21-10.60 Reinforcing In Place Reinforcing Steel Reinforcing In Place Reinforcing Steel Accessories 415-1-5 Reinforcing Steel Substructure	ssories	0.53	0.50	-	0.11	-	1.13 _	51,935 51,935 51,935 51,935
455-143-5 Test Piles 31-62-00.00 Driven Piles 31-62-13.23 Prestressed Concre Prestressed concrete piles, 24" square, Test Pile Prestressed Concrete Piles Driven Piles 455-143-5 Test Piles	te Piles 170.00 vlf	32.18	65.77	-	18.54	-	116.48 -	19,802 19,802 19,802 19,802
455-34-5 Concrete Piling Prestresser 31-62-00.00 Driven Piles 31-62-13.23 Prestressed Concret Prestressed concrete piles, 24" square, Prestressed Concrete Piles Driven Piles 455-34-5 Concrete Piling Prestressed Substructure-Piers Substructure-Piers		11.70	65.77	-	6.74	-	84.21 -	165,050 165,050 165,050 165,050
Superstructure Superstructure 110-3 Structure Removal of Existing 02-41-16.00 Structure Demolition 02-41-16.33 Bridge Demolition Bridge demolition Bridge Demolition Structure Demolition	21,048.00 sf	15.31		-	9.18	-	24.49 _	515,552 515,552 515,552

Spreadsheet Level	Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
110-3 Structure Removal								515,552
of Existing								
400-147 Composite Neoprene Pads								
05-05-23.00 Metal Fastenings								
05-05-23.80 Vibration & Bearing	Pads							
Bearing Pads	37.80 cf	85.05	717.46	-	-	-	802.51	
Vibration & Bearing Pads								30,335
Metal Fastenings								30,335
400-147 Composite								30,335
Neoprene Pads								
400-2-4 Concrete Class II								
03-30-00.00 Cast-In-Place Concrete)							
03-30-53.40 Concrete In Place								
Concrete Class II	905.20 cy	154.57	173.39	-	20.87	-	348.83	315,757
Concrete In Place							_	315,757
Cast-In-Place Concrete								315,757
400-2-4 Concrete Class II								315,757
400-9 Bridge Floor Grooving								
32-13-13.00 Concrete Paving								
32-13-13.23 Concrete Paving Su	rface Treatment							
Concrete grooving	4,158.00 sy	2.51	-	-	5.20	-	7.71	32,061
Concrete Paving Surface							-	32,061
Treatment								
Concrete Paving								32,061
400-9 Bridge Floor								32,061
Grooving								
415-1-4 Reinforcing Steel								
03-21-05.00 Reinforcing Steel Acces	ssories							
03-21-10.60 Reinforcing In Place								
Reinforcing Steel	185,566.00 lb	0.40	0.06	-	0.08	-	0.54	99,503
Superstructure								•
Reinforcing In Place							-	99,503
Reinforcing Steel								99,503
Accessories								•
415-1-4 Reinforcing Steel								99,503

450-2-54 Prestressed Beams

32-34-00.00 Fabricated Bridges 32-34-10.10 Bridges, Highway

Takeoff Quantity	Labor Cost/Unit	Material Cost/Unit	Sub Cost/Unit	Equip Cost/Unit	Other Cost/Unit	Total Cost/Unit	Total Amount
4,224.00 lf	-	-	-	-	- 191.32	191.32	808,150
						-	808,150 808,150 808,150
nt							
274.00 If	114.21	326.45	-	3.69	-	444.34	121,750
							121,750 121,750 121,750
							,
1,296.00 If	13.96	49.03	-	4.44	-	67.43	87,387
							87,387 87,387 87,387
							2,010,494
	4,224.00 lf	Takeoff Quantity Cost/Unit 4,224.00 If - 274.00 If 114.21	Takeoff Quantity	Takeoff Quantity	1 akeoff Quantity	1 akeoff Quantity Cost/Unit Cost/Unit Cost/Unit Cost/Unit Cost/Unit Cost/Unit Cost/Unit 4,224.00 If - - - - 191.32 1	1 A,224.00 If 191.32 191.32 1

Estimate Totals

Description	Amount	Cuts/Adds Net Amount	Totals	Hours	Rate	Cost Basis	Percent of Total	
Labor	2,261,867	2,261,867		23,167.905 ch			29.67%	
Material Subcontract	1,346,597	1,346,597					17.66%	
Equipment	455,609	455,609		2,779.449 ch			5.98%	
Other	3,560,137	3,560,137					46.70%	
	7,624,210		7,624,210				100.00	100.00%
Total			7,624,210					